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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/574,284 | 03/31/2006 | **Mitsuru Eida** | 288244US2PCT | 5500 |

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| EXAMINER | |
|---|---|
| GUHARAY, KARABI | |
| **ART UNIT** | **PAPER NUMBER** |
| 2889 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 04/24/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/574,284 | EIDA ET AL. | |
| | Examiner | Art Unit | |
| | Karabi Guharay | 2889 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/31/06; 10/19/06; 7/31/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Information Disclosure Statement*

The information disclosure statement (IDS) submitted on 3/31/06 & 10/19/06 and 7/31/08 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Claim Objections*

Claims 11, 29-31 are objected to because of the following informalities: Claim11, and 29-31 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 11 & 29 depends from claim 1 which already recites "an emitting medium".

Claim 31-32 depends from claim 3, which already recites "an emitting medium". Appropriate corrections are required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the particle of inorganic material". There is insufficient antecedent basis for this limitation in the claim.

Claim 7 is rejected being dependent on claim 6.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 11-12, 14-16, 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 2003/0132701).

Regarding claims 1-7, 11-12, 14-20, 29-32, Sato et al. discloses a luminescent device (Fig 1A and Fig 1B) that emits white light (paragraph 10) comprising a color conversion layer (5) and an emitting medium (1) which is a light emitting diode (paragraph 31) wherein the color conversion layer comprising a fluorescent medium (4) for converting light emitted from the emitting medium to light having a longer wavelength (paragraphs 6 and 65). Sato et al. further teaches a diffusing agent, which are particles of an inorganic material such as aluminum oxide, titanium oxide (paragraph 69) is added to the color conversion medium which causes satisfactory random reflection (scattering), Further Sato et al. teaches that the inorganic particles are coated with transparent resin material which suppress extinction of fluorescent particle (paragraph 21 & 36), and the color conversion layer is formed on the substrate (on the mounting resin ; paragraph 83).

Though it is not mentioned explicitly, since scattering of light inside the color conversion medium is made high, amount of haze value is high, and further Sato et al. teaches that the application of diffusion agent can be varied depending on the intended application. Thus it would have been obvious to one having ordinary skill in the art to set the haze value of the color conversion medium to 50% to 95% so as to have more internal reflection in the medium, to obtain higher color purity (see paragraphs 69-70).

Claims 9, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al., and further in view of Yu et al. (US 2002/0063520).

Regarding claims 9, 23-25, Sato et al. discloses all the limitations of claims 9, 23-25, except for a color filter stacked on color conversion layer.

However, in the same filed of light emitting device (Fig 7), Yu et al. discloses a color conversion layer (52) and a color filter layer (55) is stacked on the device (paragraph 13 & 30) in order to improve the purity of the emitted light.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a color filter stacked in the device of Sato et al. since color filter will improve the purity of the emitted color.

Claims 8, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. as applied to claims 1, 3-4 above, and further in view of Sylvester et al. (US 2004/0252933).

Regarding claims 8, 21-22, Sato discloses diffusing material being inorganic oxide, however, is silent about whether the particles are solid or hollow.

However, Sylvester et al. in the device of light distribution, teaches that both solid and hollow micro-spheres are suitable scattering particles for uniform light distribution (paragraph 43).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to have hollow particles for scattering since selection of known material for known purposes is within the skill of art.

Claims 10, 13, 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 2003/0132701), and further in view of Kuma et al. (US 2003/0127968).

Regarding claims 10, 26-28, Sato et al. disclose all the limitations of claims 10, 26-28, except for a color filter material being mixed with fluorescent medium in color conversion layer.

However, in the filed of luminous device, Kuma et al. disclose that light adjusting members (see Fig 6) comprises the mixture of fluorescent dye as color converting material and a color filter material in order to produce improved color of the device (paragraphs 3 & 7-9).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the mixture of fluorescent dye as color converting material and a color filter material in order to produce improved color.

Regarding claim 13, Sato et al. discloses LED ad the emitter of light, while Kuma discloses an El device as an emitter in front of color conversion layer containing fluorescent and color filter material.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use El device instead of LED as the emitter in the device of Sato et al. since selection of known devices for known purpose (in this case light emitter) is within the skill of art.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on 571-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karabi Guharay/
Primary Examiner, Art Unit 2889